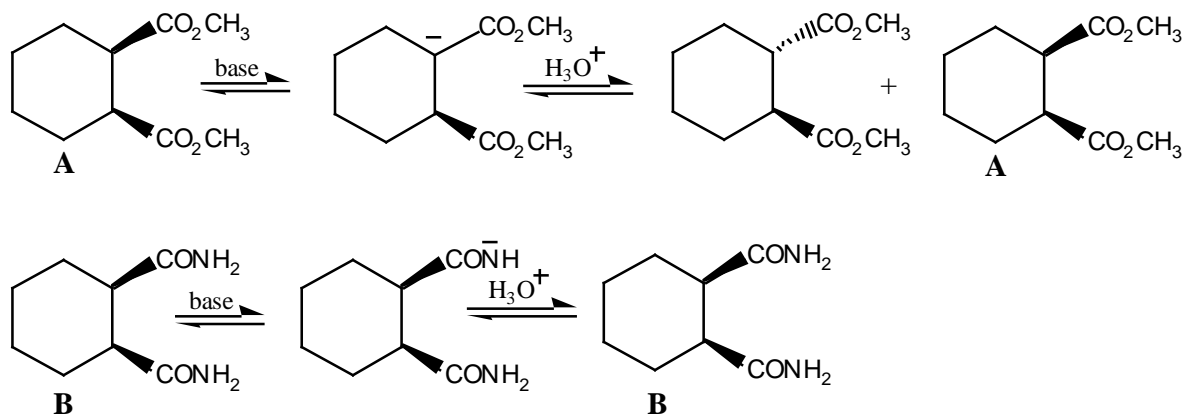
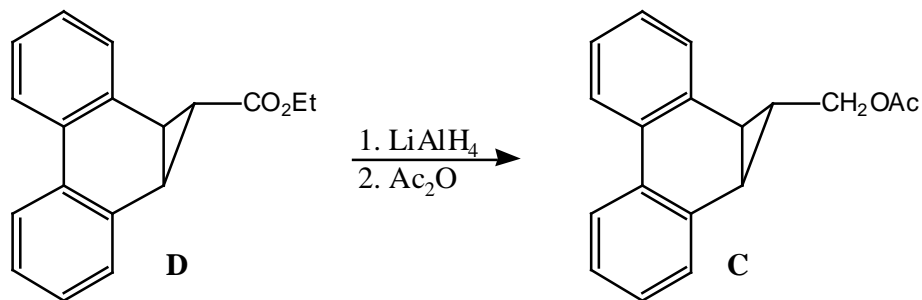


Answers to Problem Set #10
CH242-2002S

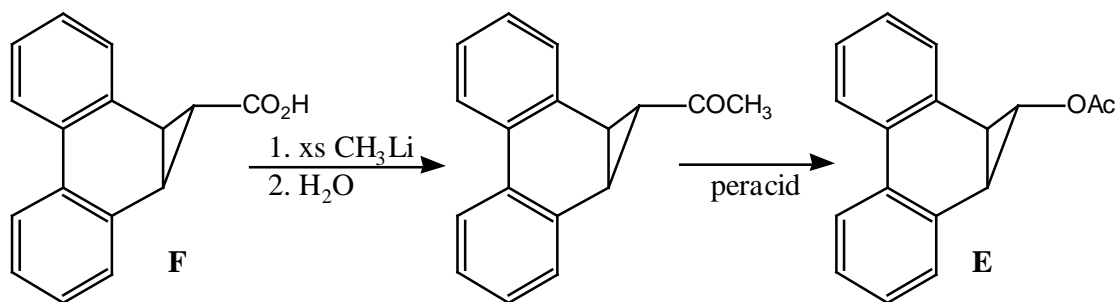
- (1) (a) In **A**, the proton on the α -carbon is removed since it is fairly acidic. Since the resulting resonance-stabilized anion is *planar*, it can be protonated from either side to give the observed mixture of isomers. In the case of **B**, the most acidic site is the NH_2 group (why?), and the deprotonation-protonation sequence there has no bearing on the stereochemistry at the α -carbon.



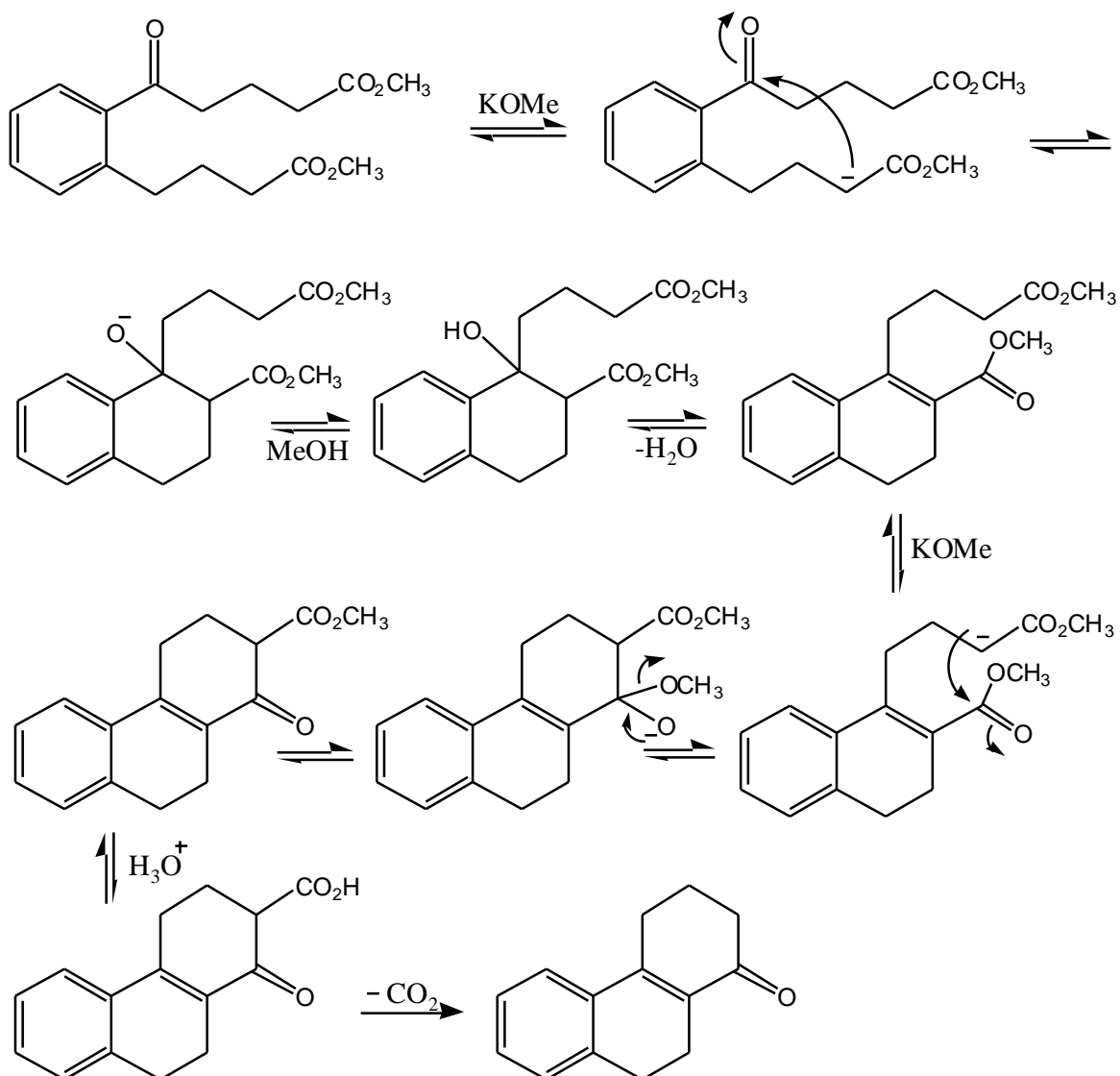
(b)



(c)



- (2) Start with an intramolecular condensation of the ester enolate with the carbonyl of the ketone to make a six-membered ring. Protonation and dehydration gives the α,β -unsaturated double bond. A Dieckmann reaction (another name for an intramolecular Claisen condensation) then gets you to the final product. Acidification leads to a β -keto carboxylic acid that readily spews out CO_2 .



- (3) Alkylation of diethyl malonate followed by conversion of both esters to amides is surely one way of getting to the product. Alternatively, you could also do the amide formation first and then alkylate between the two carbonyls.

